

# PROTOTYPE DESIGN COLLECTION

## SERIES 2



# Prototype Design Collection

Series 2



**AHMAD NAJMIE RUSLI**

**UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR  
KAMPUS PASIR GUDANG**

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**CHIEF EDITOR:**

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Tel: +60 7-381 8493

# FOREWORD

This digital book on Prototype Design Collection Series 2 (PDC Series 2) is published as a reference design for mechanical engineering students. The designs presented experience a few phases of analysis before fabrication of prototype. Each project summarises the project description, prototype, figures, and design parameter. The design products vary in tools or equipment for household, workshop, entrepreneur, etc. Suggested material and detail of prototype dimension are also mentioned in this book.

It is hoped that this book will assist the students to have more ideas on innovation design products in the future.

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## CHAPTER 135

### Design and Fabrication of Automatic Flour Filter and Separator

Muhammad Amir Haziq Mohd Yusri <sup>1</sup> and Nurrul Amilin Zainal Abidin <sup>2\*</sup>

<sup>1,2</sup>*Mechanical Engineering Studies, College of Engineering, Universiti Teknologi MARA  
Johor Branch, Pasir Gudang Campus, 81750 Masai, Bandar Seri Alam, Johor Darul Ta'zim.*

*\*Corresponding author (e-mail): nurrul0230@uitm.edu.my*

#### PROJECT DESCRIPTION

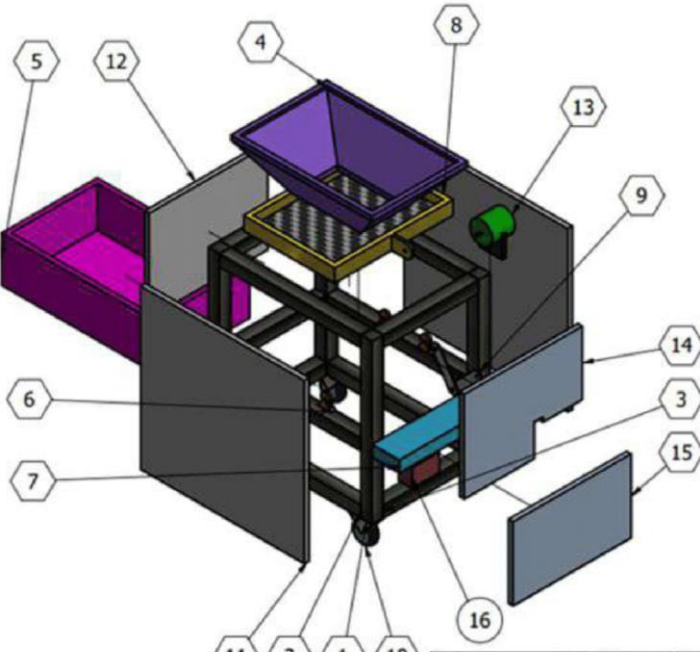
The process of filtering flour to finish often leads to energy and time consuming, especially for large scale business. The flour filters used are traditionally made of wood, plastic and metal that eventually corrode and contaminate over time. For a large-scale business, the flour filter machine is technically bulky, not portable, and expensive. Some of the products available in the market are technically small, not durable and are only able to sift the flour in a very small amount. Thus, the aim of this project is to design and fabricate a portable machine that can sift the flour with less contamination issues over a long time. The proposed automatic flour filter and separator machine is equipped with a dc motor that powers the conveyor which is responsible to move the filter repeatedly in linear direction. The sifted flour will go into the funnel equipped on the lower part of the filter. This machine is useful for the home appliances and to the small or large-scale business owners that uses flour as a main ingredient. The machine is portable and easy to carry. The machine is designed to reduce the energy and the time consumed in filtering the flour.

**Keywords:** *Automatic flour filter, Flour separator*

#### PROTOTYPE



**DESIGN PARAMETER**



PARTS LIST		
ITEM	QTY	PART NUMBER
1	4	leg
2	6	vertical base
3	5	horizontal leg
4	1	funnel
5	1	drawer
6	4	wheel
7	1	motor based
8	1	filter
9	2	shaft
10	4	rim
11	2	side cover
12	1	front cover
13	1	motor
14	1	back cover
15	1	back cover lower
16	1	electric box

Designed by Amir	Checked by	Approved by	Date	Date
UITM Kampus Pasir Gudang		FLOUR FILTER		
PART LIST			Edition	Sheet 1 / 1